

Please provide the following information, and submit to the NOAA DM Plan Repository.

Reference to Master DM Plan (if applicable)

As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

1. General Description of Data to be Managed

1.1. Name of the Data, data collection Project, or data-producing Program:

Chesapeake Bay and the Outer Coasts of Maryland and Virginia 2016 ESI
INVERTEBRATE Polygons, Points

1.2. Summary description of the data:

This data set contains sensitive biological resource data for marine, estuarine, and freshwater invertebrate species, as well as terrestrial insects in Chesapeake Bay and the Outer Coasts of Maryland and Virginia. Vector polygons in this data set represent invertebrate distribution and concentration areas. Vector points in this data set represent invertebrate occurrences. Species specific abundance, seasonality, status, life history, and source information are stored in relational data tables (described below) designed to be used in conjunction with this spatial data layer. This data set comprises a portion of the ESI data for Chesapeake Bay and the Outer Coasts of Maryland and Virginia. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources.

1.3. Is this a one-time data collection, or an ongoing series of measurements?

One-time data collection

1.4. Actual or planned temporal coverage of the data:

2014 to 2016

1.5. Actual or planned geographic coverage of the data:

W: -77.5418, E: -74.7942, N: 39.7215, S: 36.5498

This reflects the extent of all land and water features included in the overall Chesapeake Bay and Outer Coasts of Maryland and Virginia 2016 ESI study region. The bounding box for this particular feature class may vary depending on occurrences identified and mapped.

1.6. Type(s) of data:

(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)

Map (digital)

1.7. Data collection method(s):

(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)

1.8. If data are from a NOAA Observing System of Record, indicate name of system:

1.8.1. If data are from another observing system, please specify:

2. Point of Contact for this Data Management Plan (author or maintainer)

2.1. Name:

ESI Program Manager

2.2. Title:

Metadata Contact

2.3. Affiliation or facility:

2.4. E-mail address:

orr.esi@noaa.gov

2.5. Phone number:

3. Responsible Party for Data Management

Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.

3.1. Name:

ESI Program Manager

3.2. Title:

Data Steward

4. Resources

Programs must identify resources within their own budget for managing the data they produce.

4.1. Have resources for management of these data been identified?

4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):

5. Data Lineage and Quality

NOAA has issued *Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates*.

5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible

(describe or provide URL of description):

Lineage Statement:

This atlas supersedes two separate first edition atlases, Virginia (2005, #25) and Maryland (2007, #47).

Process Steps:

- 2016-09-01 00:00:00 - INVERTEBRATE Polygons: Marine and estuarine distributions of brown shrimp, white shrimp, mantis shrimp, squid species and blue crab were mapped using fishery-independent data from the NEAMAP, ChesMMAP, VIMS Juvenile Fish and Blue Crab Trawl surveys and expert opinion from MD DNR and VIMS. General distributions of oysters and other shellfish species in Virginia were mapped using data from shellfish lease areas and expert knowledge by resource managers at VA MRC and from the Habitat Requirements for Chesapeake Bay Living Resources. Oyster reefs mapped in the coastal bays of Virginia came from digital data provided by VIMS from the Population Assessment of Eastern Oysters (*Crassostrea virginica*) in the Seaside Coastal Bays. Points were buffered by 25 meters and merged together based on input from VIMS scientists. In Maryland, shellfish species data comprise a combination of survey data, reports and expert knowledge provided by MD DNR shellfish researchers. These include Maryland's DNR Oyster Dredge Survey, Coastal Hard Clam Survey and Assessment of Chesapeake Bay Commercial softshell clams, *Mya arenaria* and *Tagelus plebeius*. Oyster reefs mapped in the ESI are not necessarily the only reefs in coastal areas, but represent current and potential oyster habitat in the bays. Additional invertebrate species were mapped into the coastal bays of Virginia and Maryland and in marine waters out to 12 NM based on survey data from NEAMAP and expert knowledge from resource managers and scientists at MD DNR, VA MRC and VIMS. All spatial and attribute data in this ESI were finalized through systematic review by scientists and resource experts from MD DNR, VA MRC and VIMS. Horseshoe crab spawning beaches came from three different sources. In the Coastal Bays of Maryland, spawning beaches represent expert knowledge provided by Steve Doctor. Spawning beaches in Tom's Cove were mapped from the Tom's Cove, Virginia Horseshoe Crab Tag Recovery Study Interim Report. Lastly, a number of small spawning sites within Chesapeake Bay were mapped using public sighting data provided by MD DNR. Horseshoe crabs utilize whatever appropriate habitat that is available inside Chesapeake Bay for spawning, and these areas can shift over time. Freshwater mussels represent VDGIF's Freshwater Mussel database, MD DNR's Ecologically Significant Areas database, and the Maryland Biological Stream Survey data. Species observations mapped from the VDGIF database were restricted to the

dates 1995-2013, and only include records that fell within 1000m of ESI water bodies that are continuous to the ocean. Species mapped in Maryland have similar importance, but also include two endangered species: the dwarf wedgemussel (FE, MD SE) and the triangle floater (MD SE). Species mapped from MD DNR's Ecologically Significant Areas database are restricted based on date of last survey and include the years 1996 to 2016. A number of insects of conservation concern were mapped in Maryland using MD DNR's Ecologically Significant Areas database. Records were selected based upon date of last survey, and include data from 1996 to 2016. Northeastern beach tiger beetle (FT, MD SE, VA ST) occurrences in Virginia were mapped from a USFWS hard copy map. Northeastern beach tiger beetles were mapped in the study area according to expert knowledge.

- 2016-09-01 00:00:00 - INVERTEBRATE Points: Mussels mapped in Virginia represent rare species that are of conservation concern and are of significant ecological importance. Species observations mapped from the VDGIF database were restricted to the dates 1995-2013. Data mapped in Maryland includes only one species of fresh water mussel, the Eastern elliptio, and date ranges for this data spans 1995-2014. Both data sets were mapped only with a 1000 meter buffer extending from the ESI water polygon layer, in an effort to restrict the occurrences to those likely to be impacted during a spill response scenario.

- 2016-09-01 00:00:00 - Data from the above sources were compiled by the project biologist to create the INVERTEBRATE POLYS and POINTS data layers. Three general approaches are used for compiling the data layer: 1) information gathered during initial interviews and from hardcopy sources are compiled onto U.S. Geological Survey 1:24,000 topographic quadrangles and digitized; 2) hardcopy maps are digitized at their source scale; 3) digital data layers are evaluated and used "as is" or integrated with the hardcopy data sources. See the Lineage section for additional information. Once the ESI, biology, and human-use data are compiled into the standard ESI digital data format, a second set of interviews with participating resource experts are conducted to review the compiled data. If necessary, edits to the INVERTEBRATE POLYS and POINTS data layers were made based on the recommendations of the resource experts, and final hardcopy maps and digital data are created.

5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:

5.2. Quality control procedures employed (describe or provide URL of description):

6. Data Documentation

The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.

6.1. Does metadata comply with EDMC Data Documentation directive?

No

6.1.1. If metadata are non-existent or non-compliant, please explain:

Missing/invalid information:

- 1.7. Data collection method(s)
- 4.1. Have resources for management of these data been identified?
- 4.2. Approximate percentage of the budget for these data devoted to data management
- 5.2. Quality control procedures employed
- 7.1. Do these data comply with the Data Access directive?
 - 7.1.1. If data are not available or has limitations, has a Waiver been filed?
 - 7.1.2. If there are limitations to data access, describe how data are protected
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location
- 8.3. Approximate delay between data collection and submission to an archive facility
- 8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

6.2. Name of organization or facility providing metadata hosting:

NMFS Office of Science and Technology

6.2.1. If service is needed for metadata hosting, please indicate:**6.3. URL of metadata folder or data catalog, if known:**

<https://www.fisheries.noaa.gov/inport/item/55160>

6.4. Process for producing and maintaining metadata

(describe or provide URL of description):

Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf

7. Data Access

NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.

7.1. Do these data comply with the Data Access directive?

7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?

7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:

7.2. Name of organization of facility providing data access:

Office of Response and Restoration (ORR)

7.2.1. If data hosting service is needed, please indicate:

7.2.2. URL of data access service, if known:

https://response.restoration.noaa.gov/esi_download

7.3. Data access methods or services offered:

Data can be accessed by downloading the zipped ArcGIS geodatabase from the Download URL (see Distribution Information). Questions can be directed to the ESI Program Manager (Point Of Contact).

7.4. Approximate delay between data collection and dissemination:

7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:

8. Data Preservation and Protection

The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.

8.1. Actual or planned long-term data archive location:

(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)

8.1.1. If World Data Center or Other, specify:

8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:

8.2. Data storage facility prior to being sent to an archive facility (if any):

Office of Response and Restoration - Seattle, WA

8.3. Approximate delay between data collection and submission to an archive facility:

8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection

9. Additional Line Office or Staff Office Questions

Line and Staff Offices may extend this template by inserting additional questions in this section.